



XERISCAPING 101

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What is xeriscaping?

- Xeri → 'dry'
- Scape → 'view'



- “Xeriscaping is the practice of designing landscapes to reduce or eliminate the need for irrigation. This means xeriscaped landscapes need little or no water beyond what the natural climate provides,” – *National Geographic*
- An environmentally-friendly alternative to costly lawns & gardens
- Not just rocks and cacti – an abundance of plants!

Why do it?

Pros

- Reduces air pollution & runoff
- Creates better environmental footprint
- Reduces need for fertilizer (typically)
- Provides work-free garden over time
- Saves you money



Cons

- Requires initial monetary investment
- Requires extra work up front
- Decreases green space, depending
- Creates a rougher soil
- Requires research about area's climate



Saving water and money

Who's paying your water bill?



Per Day

- The average American resident uses 107 gallons of water per day/per person*
- That roughly equates to **\$0.40 per day**/per person in the city of Billings**
- Or **\$11.42 per month**/per person

Per Year

- The average Montana resident uses 39,055 gallons of water per year/per person
- That roughly equates to **\$140.75 per year**/per person in the city of Billings

* Taken from the National Environmental Education Foundation

** Taken from the City of Billings Utilities Service Center

The price of water in Billings, MT

According to Billings' Utilities Service Center, on average residents are paying the rate of Block 2 & Block 3

Water Metered Monthly Charges Within City

Customer Class	Volume (in Centum Cubic Feet (ccf))	Rate
Residential - Block 1	0 to 14 ccf	\$2.66
Residential - Block 2	15 to 43 ccf	\$3.19
Residential - Block 3	44 to 100 ccf	\$4.15
Residential - Block 4	Greater than 100 ccf	\$6.23
Non-Residential	n/a	\$2.30
Multi-Family	n/a	\$2.69
Seasonal	n/a	\$3.79

Water Metered Monthly Charges Outside City

Customer Class	Volume (in Centum Cubic Feet (ccf))	Rate
Residential - Block 1	0 to 14 ccf	\$2.76
Residential - Block 2	15 to 43 ccf	\$3.31
Residential - Block 3	44 to 100 ccf	\$4.31
Residential - Block 4	Greater than 100 ccf	\$6.46
Non-Residential	n/a	\$2.43



Utilities Service Center

2251 Belknap Avenue
Billings, MT
59101

Phone number for M-F,
8:00a – 5:00p:

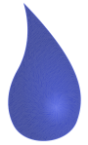
406-657-8315

Phone number for after-
hour emergencies:

406-657-8353

Beyond your wallet:

From an **environmental & community-driven** perspective, you promote...



96K gallons of water savings/year (30% annual water use)¹



Native plants and animals



Reduction of theft and vandalism in at-risk communities²

¹ – Taken from a five-year study by the Southern Nevada Water Authority and the U.S. Bureau of Reclamation

² – Taken from research in "Palaces for the People: How Social Infrastructure Can Help Fight Inequality, Polarization, and the Decline of Civic Life," by Eric Klinenberg



7 Elements of Xeriscaping



Planning & design



Soil analysis & improvement



Low water-use plant selection

Turf planning

Efficient irrigation

Mulch

Maintenance



STEP #1:

PLANNING & DESIGN



Consider

**SPACIAL
RESTRICTIONS**

SUN & SHADE

FINANCES

KIDS & PETS

Create an availability map

- What kind of garden do you want?
 - Do you want a walkway?
 - Do you have a patio to build around?
 - What plants do you want to keep?
- Remember natural interferences, like sun and shade
- What's your water zone?
 - (Next slide)
- Consider use areas that aren't for gardening
 - Do you need places for your pets, kids, etc.?
 - How often are you in your front lawn?

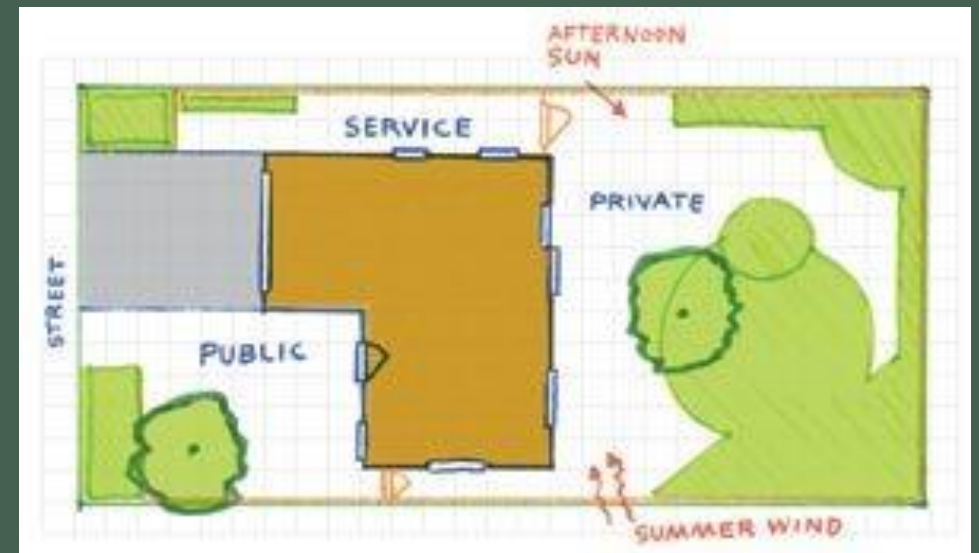
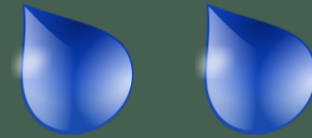


Photo taken from Water Use It Wisely

The 3 water zones

- High water zone
 - Requires almost, if not daily watering
 - Typically is not native to Montana garden
- Moderate water zone
 - Requires weekly watering
 - Your xeriscaping garden will most likely start as a moderate water zone
- Low water zone
 - Requires rain water only – you don't have to do any work!
 - Can take moderate water zones 8-10 weeks to reach this point





STEP #2: SOIL ANALYSIS & IMPROVEMENT

Consider composting

- What kind of nutrients does your garden need?
- Compost adds important nutrients
- Does your garden consist of high or moderate water zones?



Photo taken from The Real Farmhouse

Test your soil pH

Phosphorus

- Root development
- Seed production
- Plant DNR

Nitrogen

- Enzyme reactions to stabilize nutrients
- Vegetative growth
- Plant protein

Potassium

- Enzyme activation
- Drought control
- Heat and chill control



STEP #3:

CHOOSING LOW WATER-
USE PLANTS

Let your plants make friends



- Keep plants that need similar amounts of water together
 - Remember the 3 water zones!
- What's going to block shade/sun/rain?
 - If you plant a tree, the branches might take away direct sunlight for any plants under it
- Plants that need water should go at the bottom of slopes, as they'll collect any water runoff
- Low water-use plants enjoy:
 - Sun exposure
 - Dry spots
 - Wind

Getting started

- Consider buying a variety of plants in length, color, size



Shrubs (Juniper)



Grasses (Nassella/stipa)



Bulbs (Crocus)



Trees (Crocus)



Perennials (Penstemon)

Smaller plants
are going to be
less expensive,
and they'll
eventually
grow bigger

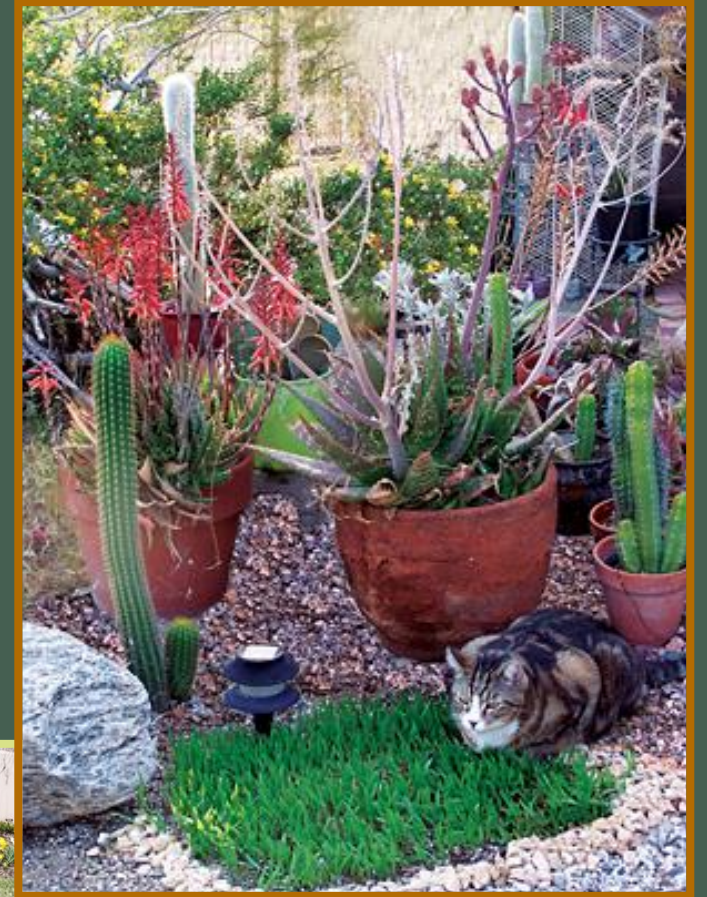


STEP #4:

TURF PLANNING

Be selective

- It's okay to have turf
- Try keeping areas of your garden as turf instead of your whole lawn
- Add vegetables and fruits if you want more greenery
- Remember that lawns take more maintenance than xeric gardens



Reducing turf

- Ask yourself:
 - How often do you use your grass?
 - What is the purpose of it?
- And decide from there





STEP #5:

EFFICIENT IRRIGATION

Do's & Don'ts

- **DO:** Water wilting plants
 - **DON'T:** Water wilting plants that could be wilting from the day's heat
- **DO:** Water in the early mornings & late evenings
 - **DON'T:** Water in the middle of the day

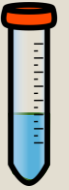


Pro Tip →

If your plants are still wilting in the evening, make sure to water them in the morning. This probably means that they're lacking water, and that their wilting wasn't just caused by the day's heat.

Do's & Don'ts

- **DO:** Use drip irrigation. Systems with timers are great
 - **DON'T:** Use a sprinkler, unless it's for your lawn
- **DO:** Water the roots of your plants
 - **DON'T:** Water the tops/leaves
- **DO:** Use a rain gauge



If you want help, look for contractors that are certified with a "WaterSense" label. This label means they'll be able to efficiently ensure water isn't wasted per EPA criteria



STEP #6:

MULCH

“I love weeds...”

If this is not you, use mulch!

Mulch can,

1. Prevent weeds and erosion
2. Protect soil
3. Keep water in soil



Choosing your mulch

Type		Advantage	Disadvantage
Pine straw		Excellent for water conservation	Flammable when dry. Decomposes quickly.
Pine park	★	Conserves moisture well. Use the mini nuggets.	None.
Leaves	★	Readily available. Hold moisture well.	Not as neat in appearance as bark.
Grass clippings		None	Use for compost
Gravel		Long lasting.	Absorbs too much heat; can damage plants
Newspaper		Layer two sheets under organic mulch. Helps conserve moisture.	Acts as a moisture barrier if placed too thick.
Fabric		Keeps moisture, nutrients in, weeds out.	Hard to install
Plastic		None	Blocks oxygen, water and nutrients



STEP #7:

MAINTENANCE

Sit back and relax

- This is the easy part!
- If you followed the previous six steps, there should be little to no maintenance needed for your xeriscape
- Have a couple check-ins to make sure your plants aren't wilting – especially in the beginning weeks – and that weeds aren't pushing through any protective layers



Remember

- Go native!
- Group plants with the same watering needs
- Reduce turf
- Keep healthy soils
- Water wisely



Additional resources

- Environmental Protection Agency: [Water-Smart Landscapes](#)
- Water Use It Wisely: [Principles of Xeriscape Design](#)
- City of Boulder, CO: [Water-Wise Gardening](#)
- University of Florida: [The 9 Principles of Florida-Friendly Landscaping](#)



QUESTIONS

I'm "rooting" for you!

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